CAMPYLOBACTERIOSIS

Also known as: *Campylobacter* enteritis, Vibrionic enteritis

Responsibilities:
Hospital: Report by IDSS, facsimile, mail or phone
Lab: Report by IDSS, facsimile, mail or phone
Physician: Report by IDSS, facsimile, mail or phone
Local Public Health Agency (LPHA): No follow-up required, except in outbreak situations

Iowa Department of Public Health
Disease Reporting Hotline: (800) 362-2736
Secure Fax: (515) 281-5698

1) THE DISEASE AND ITS EPIDEMIOLOGY

A. Agent

Bacteria of the genus *Campylobacter* are responsible for campylobacteriosis. *Campylobacter jejuni* (*C. jejuni*) a species of *Campylobacter* is responsible for about 99% of campylobacteriosis in humans, with the remainder of cases caused by other species.

B. Clinical Description

Symptoms: of campylobacteriosis are diarrhea (sometimes bloody), abdominal pain, malaise, fever, nausea, and sometimes vomiting. Infection can cause a spectrum of disease ranging from mild, uncomplicated gastroenteritis to severe disease similar to acute appendicitis. Asymptomatic infections also occur. The illness is usually over within a week but may be prolonged in some individuals and can sometimes relapse.

Long-term complications: include reactive arthritis and Guillain-Barré syndrome, a rare disease that affects the nerves of the body beginning several weeks after the diarrheal illness. This complication results in paralysis that lasts several weeks and usually requires intensive care. It is estimated that approximately 1 in every 1000 reported campylobacteriosis cases leads to Guillain-Barré syndrome and as many as 40% of Guillain-Barré syndrome cases in this country are triggered by campylobacteriosis.

Campylobacteriosis can cause life-threatening sepsis in persons with compromised immune systems.

C. Reservoirs

Campylobacter bacteria are present in animals, most frequently cattle and poultry, although swine, sheep, and even pets such as birds, kittens and puppies may be sources of human infection. A large percentage of raw poultry is contaminated with *C. jejuni*.

D. Modes of Transmission

Campylobacter is transmitted via food. The most common mode of transmission is ingestion of food or water that has been contaminated with animal or human feces. This includes raw and undercooked poultry or pork, inadequately treated drinking water, and raw milk and raw milk products. However, any food contaminated with the bacteria can be a source of infection. In addition, farm animals and pets, such as puppies with diarrhea, can be sources of infection. Person-to-person spread can also occasionally occur, especially among household contacts, pre-school children in child care, the elderly and developmentally disabled persons living in residential facilities. Transmission can also occur through certain types of sexual contact (e.g., oral-anal contact). A low dose of organisms is all that is needed to

cause infection, but the infectious dose may be lower for certain susceptible groups such as children, the elderly and the immunocompromised.

E. Incubation Period

The incubation period can vary from 1 - 10 days but is usually about 2 - 5 days; incubation period may vary based on number of bacteria ingested.

F. Period of Communicability or Infectious Period

The disease is communicable for as long as the infected person excretes *Campylobacter* bacteria in their stool. This can occur from days to several weeks. People who are not given antibiotics have been known to shed these bacteria for as long as 7 weeks.

G. Epidemiology

Campylobacter is the most common bacterial cause of diarrheal illness in the United States. It is estimated that 1.3 million cases occur annually with almost all cases occurring as isolated, sporadic events. Although common source outbreaks due to this organism have occurred, larger outbreaks due to *Campylobacter* are not usually associated with undercooked, pork, poultry and cattle but are typically related to consuming unpasteurized milk, cheese or contaminated water. Outbreaks due to *Campylobacter* are uncommon. Children and young adults have the highest incidence of infection. *Campylobacter* doesn't commonly cause death, however there are an estimated 76 persons with *Campylobacter* infections that die each year.

H. Bioterrorism Potential

None.

2) DISEASE REPORTING AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- To identify transmission sources of major public health concern (e.g., a restaurant or commercially distributed food product) and to stop transmission from such sources.
- To identify whether the case may be a source of infection for other persons (e.g., a diapered child, child care attendee or food handler) and, if so, to prevent further transmission.

B. Laboratory and Healthcare Provider Reporting Requirements

Iowa Administrative Code 641-1.3(139) stipulates that the laboratory and the healthcare provider must report. The preferred reporting method is through the Iowa Disease Surveillance System (IDSS). The reporting phone number for IDPH Center for Acute Disease Epidemiology (CADE) is (800) 362-2736; fax number (515) 281-5698, mailing address:

IDPH, CADE
Lucas State Office Building, 5th Floor
321 E. 12th St.
Des Moines, IA 50319-0075

Postage-paid disease reporting forms are available free of charge from the IDPH clearinghouse. Call (319) 398-5133 or visit the website: healthclrhouse.drugfreeinfo.org/cart.php?target=category&category_id=295 to request a supply.

Laboratory Testing Services Available

The University of Iowa State Hygienic Laboratory (SHL) will test stool specimens for the presence of *Campylobacter* and will confirm and speciate isolates sent from clinical specimens at other laboratories. Additionally, SHL requests that all laboratories submit all organisms isolated during an outbreak for

possible strain typing to aid in the public health surveillance necessary for this illness. Call the SHL (319) 335-4500 for more information, or visit: www.shl.uiowa.edu/

The SHL will test implicated food items from a cluster or outbreak. Specimens are submitted through local public health departments.

C. Local Public Health Agency (LPHA) Follow-Up Responsibilities

Case Investigation

a. Individual cases: no routine follow-up required
b. Multiple cases/possible outbreak:
   If the number of reported cases of campylobacteriosis in a city/town is higher than usual, or if an outbreak is suspected, an investigation is warranted to determine the source of infection and mode of transmission. A common vehicle, such as water or food, should be sought and applicable preventive or control measures should be instituted (e.g., removing an implicated food item from the environment). Consult with an epidemiologist at IDPH or contact your regional epidemiologist if an outbreak is suspected**.** CADE can help determine a course of action to prevent further cases and can perform surveillance for cases that may cross several county lines and therefore be difficult to identify at a local level.
c. If a food or water source is suspect, follow-up may include involvement of a representative of the Iowa Department of Inspections and Appeals, Food and Consumer Safety Bureau who is involved in enforcement of the Iowa Food Code.
d. Institution of disease control measures is an integral part of case investigation. It is the LPHA responsibility to understand, and, if necessary, institute the control guidelines listed below in Section 3), Controlling Further Spread.

3) CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements

Food handlers, those caring for patients or individuals in hospital, custodial intuitions and child cares with *Campylobacter* are to be excluded from work until diarrhea ceases and education on proper handwashing is given.

Minimum Period of Isolation of Patient

After diarrhea has resolved, food handlers may return to work.

Minimum Period of Quarantine of Contacts

Contacts of a case with diarrhea who are food handlers shall be considered cases and handled in the same fashion. No restrictions otherwise.

Note: A food handler is any person directly preparing or handling food. This can include a parent or child-care provider.

B. Protection of Contacts of a Case

None.

C. Managing Special Situations

Child Care

Since campylobacteriosis may be transmitted person-to-person through fecal-oral transmission, it is important to carefully follow up on outbreaks of campylobacteriosis in a child care. General recommendations include:

- Children with *Campylobacter* infection who have diarrhea should be excluded until their diarrhea is gone.

- Children with *Campylobacter* infection who have no diarrhea and are not otherwise ill may be excluded or remain in the program if special attention is given to proper handwashing.

Minimum Period of Quarantine of Contacts

Contacts of a case with diarrhea who are food handlers shall be considered cases and handled in the same fashion. No restrictions otherwise.

Note: A food handler is any person directly preparing or handling food. This can include a parent or child-care provider.

D. Preventive Measures

Environmental Measures

Implicated food items must be removed from use. A decision about testing food items implicated in an outbreak can be made in consultation with the Department of Inspections and Appeals, Food and Consumer Safety Division and CADE.

Personal Preventive Measures/Education

To avoid exposures, recommend that people:

- Always wash their hands thoroughly with soap and water before eating or preparing food, after using the toilet, after changing diapers, and after touching their pets or other animals.
- After changing diapers, wash the child's hands as well as their own.
- In a child care, dispose of feces in a sanitary manner.
- When caring for someone with diarrhea, scrub their hands with plenty of soap and water after helping the person use the toilet, or changing diapers, soiled clothing or soiled sheets.
- Keep food that will be eaten raw, such as vegetables, from becoming contaminated by animal-derived food products.
- Avoid letting infants or young children come into contact with pets that are sick with diarrhea, especially puppies and kittens.
- Make sure to cook all food products from animals thoroughly, especially poultry products, and avoid consuming raw eggs or cracked eggs, unpasteurized milk, or other unpasteurized dairy products.
- Avoid sexual practices that may permit fecal-oral transmission. Latex barrier protection should be emphasized as a way to prevent the spread of campylobacteriosis to case's sexual partners as well as being a way to prevent the exposure to and transmission of other pathogens.

4) ADDITIONAL INFORMATION

The Council of State and Territorial Epidemiologists (CSTE) surveillance case definitions for Campylobacteriosis can be found at: www.cdc.gov/osels/ph_surveillance/nndss/phs/infdis.htm#top

CSTE case definitions should not affect the investigation or reporting of a case that fulfills the criteria in this chapter. (CSTE case definitions are used by the state health department and the CDC to maintain uniform standards for national reporting.)

References

American Academy of Pediatrics. *2000 Red Book: Report of the Committee on Infectious Diseases*. Illinois, Academy of Pediatrics, 2000.
CDC. Case Definitions for Infectious Conditions under Public Health Surveillance, 1990: www.cdc.gov/osels/ph_surveillance/nndss/casedef/case_definitions.htm
CDC Website. *Campylobacter* Infections. www.cdc.gov/nczved/divisions/dfbmd/diseases/campylobacter/
Heymann, D.L., ed. *Control of Communicable Diseases Manual, 20th Edition.* Washington, DC, American Public Health Association, 2015.